

SEQUENCE LISTING

<110> MCINNES, CAMPBELL  
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MEZNA, MOKDAD  
FISCHER, PETER

<120> METHOD FOR IDENTIFYING INHIBITORS USING A HOMOLOGY  
MODEL OF POLO-LIKE KINASE 1

<130> CCI-067US

<140> 10/579,006  
<141> 2006-05-11

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<151> 2004-11-12

<150> GB 0326396.9  
<151> 2003-11-12

<160> 8

<170> PatentIn Ver. 3.3

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<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
peptide

<400> 1  
Met Ser Tyr Tyr His His His His His Gly Met Ala Ser Asp Asp  
1 5 10 15  
Asp Asp Lys

<210> 2  
<211> 6  
<212> PRT  
<213> Artificial Sequence

<220>  
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His tag

<400> 2  
His His His His His His  
1 5

<210> 3  
 <211> 10  
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 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic  
 peptide

<400> 3  
 Arg Arg Arg Glu Glu Glu Thr Glu Glu Glu  
 1 5 10

<210> 4  
 <211> 603  
 <212> PRT  
 <213> Homo sapiens

<400> 4  
 Met Ser Ala Ala Val Thr Ala Gly Lys Leu Ala Arg Ala Pro Ala Asp  
 1 5 10 15

Pro Gly Lys Ala Gly Val Pro Gly Val Ala Ala Pro Gly Ala Pro Ala  
 20 25 30

Ala Ala Pro Pro Ala Lys Glu Ile Pro Glu Val Leu Val Asp Pro Arg  
 35 40 45

Ser Arg Arg Arg Tyr Val Arg Gly Arg Phe Leu Gly Lys Gly Phe  
 50 55 60

Ala Lys Cys Phe Glu Ile Ser Asp Ala Asp Thr Lys Glu Val Phe Ala  
 65 70 75 80

Gly Lys Ile Val Pro Lys Ser Leu Leu Lys Pro His Gln Arg Glu  
 85 90 95

Lys Met Ser Met Glu Ile Ser Ile His Arg Ser Leu Ala His Gln His  
 100 105 110

Val Val Gly Phe His Gly Phe Phe Glu Asp Asn Asp Phe Val Phe Val  
 115 120 125

Val Leu Glu Leu Cys Arg Arg Ser Leu Leu Glu Leu His Lys Arg  
 130 135 140

Arg Lys Ala Leu Thr Glu Pro Glu Ala Arg Tyr Tyr Leu Arg Gln Ile  
 145 150 155 160

Val Leu Gly Cys Gln Tyr Leu His Arg Asn Arg Val Ile His Arg Asp  
 165 170 175

Leu Lys Leu Gly Asn Leu Phe Leu Asn Glu Asp Leu Glu Val Lys Ile  
 180 185 190

Gly Asp Phe Gly Leu Ala Thr Lys Val Glu Tyr Asp Gly Glu Arg Lys  
 195 200 205

Lys Thr Leu Cys Gly Thr Pro Asn Tyr Ile Ala Pro Glu Val Leu Ser  
 210 215 220  
 Lys Lys Gly His Ser Phe Glu Val Asp Val Trp Ser Ile Gly Cys Ile  
 225 230 235 240  
 Met Tyr Thr Leu Leu Val Gly Lys Pro Pro Phe Glu Thr Ser Cys Leu  
 245 250 255  
 Lys Glu Thr Tyr Leu Arg Ile Lys Lys Asn Glu Tyr Ser Ile Pro Lys  
 260 265 270  
 His Ile Asn Pro Val Ala Ala Ser Leu Ile Gln Lys Met Leu Gln Thr  
 275 280 285  
 Asp Pro Thr Ala Arg Pro Thr Ile Asn Glu Leu Leu Asn Asp Glu Phe  
 290 295 300  
 Phe Thr Ser Gly Tyr Ile Pro Ala Arg Leu Pro Ile Thr Cys Leu Thr  
 305 310 315 320  
 Ile Pro Pro Arg Phe Ser Ile Ala Pro Ser Ser Leu Asp Pro Ser Asn  
 325 330 335  
 Arg Lys Pro Leu Thr Val Leu Asn Lys Gly Leu Glu Asn Pro Leu Pro  
 340 345 350  
 Glu Arg Pro Arg Glu Lys Glu Glu Pro Val Val Arg Glu Thr Gly Glu  
 355 360 365  
 Val Val Asp Cys His Leu Ser Asp Met Leu Gln Gln Leu His Ser Val  
 370 375 380  
 Asn Ala Ser Lys Pro Ser Glu Arg Gly Leu Val Arg Gln Glu Glu Ala  
 385 390 395 400  
 Glu Asp Pro Ala Cys Ile Pro Ile Phe Trp Val Ser Lys Trp Val Asp  
 405 410 415  
 Tyr Ser Asp Lys Tyr Gly Leu Gly Tyr Gln Leu Cys Asp Asn Ser Val  
 420 425 430  
 Gly Val Leu Phe Asn Asp Ser Thr Arg Leu Ile Leu Tyr Asn Asp Gly  
 435 440 445  
 Asp Ser Leu Gln Tyr Ile Glu Arg Asp Gly Thr Glu Ser Tyr Leu Thr  
 450 455 460  
 Val Ser Ser His Pro Asn Ser Leu Met Lys Lys Ile Thr Leu Leu Lys  
 465 470 475 480  
 Tyr Phe Arg Asn Tyr Met Ser Glu His Leu Leu Lys Ala Gly Ala Asn  
 485 490 495  
 Ile Thr Pro Arg Glu Gly Asp Glu Leu Ala Arg Leu Pro Tyr Leu Arg  
 500 505 510

Thr Trp Phe Arg Thr Arg Ser Ala Ile Ile Leu His Leu Ser Asn Gly  
 515 520 525

Ser Val Gln Ile Asn Phe Phe Gln Asp His Thr Lys Leu Ile Leu Cys  
 530 535 540

Pro Leu Met Ala Ala Val Thr Tyr Ile Asp Glu Lys Arg Asp Phe Arg  
 545 550 555 560

Thr Tyr Arg Leu Ser Leu Leu Glu Glu Tyr Gly Cys Cys Lys Glu Leu  
 565 570 575

Ala Ser Arg Leu Arg Tyr Ala Arg Thr Met Val Asp Lys Leu Leu Ser  
 580 585 590

Ser Arg Ser Ala Ser Asn Arg Leu Lys Ala Ser  
 595 600

<210> 5

<211> 685

<212> PRT

<213> Homo sapiens

<400> 5

Met Glu Leu Leu Arg Thr Ile Thr Tyr Gln Pro Ala Ala Ser Thr Lys  
 1 5 10 15

Met Cys Glu Gln Ala Leu Gly Lys Gly Cys Gly Ala Asp Ser Lys Lys  
 20 25 30

Lys Arg Pro Pro Gln Pro Pro Glu Glu Ser Gln Pro Pro Gln Ser Gln  
 35 40 45

Ala Gln Val Pro Pro Ala Ala Pro His His His His His His Ser His  
 50 55 60

Ser Gly Pro Glu Ile Ser Arg Ile Ile Val Asp Pro Thr Thr Gly Lys  
 65 70 75 80

Arg Tyr Cys Arg Gly Lys Val Leu Gly Lys Gly Gly Phe Ala Lys Cys  
 85 90 95

Tyr Glu Met Thr Asp Leu Thr Asn Asn Lys Val Tyr Ala Ala Lys Ile  
 100 105 110

Ile Pro His Ser Arg Val Ala Lys Pro His Gln Arg Glu Lys Ile Asp  
 115 120 125

Lys Glu Ile Glu Leu His Arg Ile Leu His His Lys His Val Val Gln  
 130 135 140

Phe Tyr His Tyr Phe Glu Asp Lys Glu Asn Ile Tyr Ile Leu Leu Glu  
 145 150 155 160

Tyr Cys Ser Arg Arg Ser Met Ala His Ile Leu Lys Ala Arg Lys Val  
 165 170 175

Leu Thr Glu Pro Glu Val Arg Tyr Tyr Leu Arg Gln Ile Val Ser Gly  
 180 185 190  
 Leu Lys Tyr Leu His Glu Gln Glu Ile Leu His Arg Asp Leu Lys Leu  
 195 200 205  
 Gly Asn Phe Phe Ile Asn Glu Ala Met Glu Leu Lys Val Gly Asp Phe  
 210 215 220  
 Gly Leu Ala Ala Arg Leu Glu Pro Leu Glu His Arg Arg Arg Thr Ile  
 225 230 235 240  
 Cys Gly Thr Pro Asn Tyr Leu Ser Pro Glu Val Leu Asn Lys Gln Gly  
 245 250 255  
 His Gly Cys Glu Ser Asp Ile Trp Ala Leu Gly Cys Val Met Tyr Thr  
 260 265 270  
 Met Leu Leu Gly Arg Pro Pro Phe Glu Thr Thr Asn Leu Lys Glu Thr  
 275 280 285  
 Tyr Arg Cys Ile Arg Glu Ala Arg Tyr Thr Met Pro Ser Ser Leu Leu  
 290 295 300  
 Ala Pro Ala Lys His Leu Ile Ala Ser Met Leu Ser Lys Asn Pro Glu  
 305 310 315 320  
 Asp Arg Pro Ser Leu Asp Asp Ile Ile Arg His Asp Phe Phe Leu Gln  
 325 330 335  
 Gly Phe Thr Pro Asp Arg Leu Ser Ser Ser Cys Cys His Thr Val Pro  
 340 345 350  
 Asp Phe His Leu Ser Ser Pro Ala Lys Asn Phe Phe Lys Lys Ala Ala  
 355 360 365  
 Ala Ala Leu Phe Gly Gly Lys Lys Asp Lys Ala Arg Tyr Ile Asp Thr  
 370 375 380  
 His Asn Arg Val Ser Lys Glu Asp Glu Asp Ile Tyr Lys Leu Arg His  
 385 390 395 400  
 Asp Leu Lys Lys Thr Ser Ile Thr Gln Gln Pro Ser Lys His Arg Thr  
 405 410 415  
 Asp Glu Glu Leu Gln Pro Pro Thr Thr Val Ala Arg Ser Gly Thr  
 420 425 430  
 Pro Ala Val Glu Asn Lys Gln Ile Gly Asp Ala Ile Arg Met Ile  
 435 440 445  
 Val Arg Gly Thr Leu Gly Ser Cys Ser Ser Ser Glu Cys Leu Glu  
 450 455 460  
 Asp Ser Thr Met Gly Ser Val Ala Asp Thr Val Ala Arg Val Leu Arg  
 465 470 475 480

Gly Cys Leu Glu Asn Met Pro Glu Ala Asp Cys Ile Pro Lys Glu Gln  
 485 490 495

Leu Ser Thr Ser Phe Gln Trp Val Thr Lys Trp Val Asp Tyr Ser Asn  
 500 505 510

Lys Tyr Gly Phe Gly Tyr Gln Leu Ser Asp His Thr Val Gly Val Leu  
 515 520 525

Phe Asn Asn Gly Ala His Met Ser Leu Leu Pro Asp Lys Lys Thr Val  
 530 535 540

His Tyr Tyr Ala Glu Leu Gly Gln Cys Ser Val Phe Pro Ala Thr Asp  
 545 550 555 560

Ala Pro Glu Gln Phe Ile Ser Gln Val Thr Val Leu Lys Tyr Phe Ser  
 565 570 575

His Tyr Met Glu Glu Asn Leu Met Asp Gly Gly Asp Leu Pro Ser Val  
 580 585 590

Thr Asp Ile Arg Arg Pro Arg Leu Tyr Leu Leu Gln Trp Leu Lys Ser  
 595 600 605

Asp Lys Ala Leu Met Met Leu Phe Asn Asp Gly Thr Phe Gln Val Asn  
 610 615 620

Phe Tyr His Asp His Thr Lys Ile Ile Ile Cys Ser Gln Asn Glu Glu  
 625 630 635 640

Tyr Leu Leu Thr Tyr Ile Asn Glu Asp Arg Ile Ser Thr Thr Phe Arg  
 645 650 655

Leu Thr Thr Leu Leu Met Ser Gly Cys Ser Ser Glu Leu Lys Asn Arg  
 660 665 670

Met Glu Tyr Ala Leu Asn Met Leu Leu Gln Arg Cys Asn  
 675 680 685

<210> 6  
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 <212> PRT  
 <213> Homo sapiens

<400> 6  
 Met Glu Pro Ala Ala Gly Phe Leu Ser Pro Arg Pro Phe Gln Arg Thr  
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Ala Ala Ala Thr Ala Pro Pro Ala Gly Pro Gly Pro Pro Pro Ser Ala  
 20 25 30

Leu Arg Gly Pro Glu Leu Glu Met Leu Ala Gly Leu Pro Thr Ser Asp  
 35 40 45

Pro Gly Arg Leu Ile Thr Asp Pro Arg Ser Gly Arg Thr Tyr Leu Lys  
 50 55 60

Gly Arg Leu Leu Gly Lys Gly Gly Phe Ala Arg Cys Tyr Glu Ala Thr  
 65 70 75 80  
 Asp Thr Glu Thr Gly Ser Ala Tyr Ala Val Lys Val Ile Pro Gln Ser  
 85 90 95  
 Arg Val Val Lys Pro His Gln Arg Glu Lys Ile Leu Asn Glu Ile Glu  
 100 105 110  
 Leu His Arg Asp Leu Gln His Arg His Ile Val Arg Phe Ser His His  
 115 120 125  
 Phe Glu Asp Ala Asp Asn Ile Tyr Ile Phe Leu Glu Leu Cys Ser Arg  
 130 135 140  
 Lys Ser Leu Ala His Ile Trp Lys Ala Arg His Thr Leu Leu Glu Pro  
 145 150 155 160  
 Glu Val Arg Tyr Tyr Leu Arg Gln Ile Leu Ser Gly Leu Lys Tyr Leu  
 165 170 175  
 His Gln Arg Gly Ile Leu His Arg Asp Leu Lys Leu Gly Asn Phe Phe  
 180 185 190  
 Ile Thr Glu Asn Met Glu Leu Lys Val Gly Asp Phe Gly Leu Ala Ala  
 195 200 205  
 Arg Leu Glu Pro Pro Glu Gln Arg Lys Lys Thr Ile Cys Gly Thr Pro  
 210 215 220  
 Asn Tyr Val Ala Pro Glu Val Leu Leu Arg Gln Gly His Gly Pro Glu  
 225 230 235 240  
 Ala Asp Val Trp Ser Leu Gly Cys Val Met Tyr Thr Leu Leu Cys Gly  
 245 250 255  
 Ser Pro Pro Phe Glu Thr Ala Asp Leu Lys Glu Thr Tyr Arg Cys Ile  
 260 265 270  
 Lys Gln Val His Tyr Thr Leu Pro Ala Ser Leu Ser Leu Pro Ala Arg  
 275 280 285  
 Gln Leu Leu Ala Ala Ile Leu Arg Ala Ser Pro Arg Asp Arg Pro Ser  
 290 295 300  
 Ile Asp Gln Ile Leu Arg His Asp Phe Phe Thr Lys Gly Tyr Thr Pro  
 305 310 315 320  
 Asp Arg Leu Pro Ile Ser Ser Cys Val Thr Val Pro Asp Leu Thr Pro  
 325 330 335  
 Pro Asn Pro Ala Arg Ser Leu Phe Ala Lys Val Thr Lys Ser Leu Phe  
 340 345 350  
 Val Arg Lys Lys Lys Ser Lys Asn His Ala Gln Glu Arg Asp Glu Val  
 355 360 365

Ser Gly Leu Val Ser Gly Leu Met Arg Thr Ser Val Gly His Gln Asp  
 370 375 380

Ala Arg Pro Glu Ala Pro Ala Ala Ser Gly Pro Ala Pro Val Ser Leu  
 385 390 400

Val Glu Thr Ala Pro Glu Asp Ser Ser Pro Arg Gly Thr Leu Ala Ser  
 405 410 415

Ser Gly His Gly Phe Glu Glu Gly Leu Thr Val Ala Thr Val Val Glu  
 420 425 430

Ser Ala Leu Cys Ala Leu Arg Asn Cys Ile Ala Phe Met Pro Pro Ala  
 435 440 445

Glu Gln Asn Pro Ala Pro Leu Ala Gln Pro Glu Pro Leu Val Trp Phe  
 450 455 460

Ser Glu Trp Val Gly Phe Ser Asn Lys Phe Gly Phe Gly Tyr Gln Leu  
 465 470 475 480

Ser Ser Arg Arg Val Ala Val Leu Phe Asn Asp Gly Thr His Met Ala  
 485 490 495

Leu Ser Ala Asn Arg Lys Thr Val His Tyr Asn Pro Thr Ser Thr Lys  
 500 505 510

His Phe Ser Phe Ser Val Gly Ala Val Arg Arg Ala Leu Gln Pro Gln  
 515 520 525

Leu Gly Ile Leu Arg Tyr Phe Ala Ser Tyr Met Glu Gln His Leu Met  
 530 535 540

Lys Gly Gly Asp Leu Pro Ser Val Glu Glu Val Glu Val Pro Ala Pro  
 545 550 555 560

Pro Leu Leu Leu Gln Trp Val Lys Thr Asp Gln Ala Leu Leu Met Leu  
 565 570 575

Phe Ser Asp Gly Thr Val Gln Val Asn Phe Tyr Gly Asp His Thr Lys  
 580 585 590

Leu Ile Leu Ser Gly Trp Glu Pro Leu Leu Val Thr Phe Val Ala Arg  
 595 600 605

Asn Arg Ser Ala Cys Thr Tyr Leu Ala Ser His Leu Arg Gln Leu Gly  
 610 615 620

Cys Ser Pro Asp Leu Arg Gln Arg Leu Arg Tyr Ala Leu Arg Leu Leu  
 625 630 635 640

Arg Asp Arg Ser Pro Ala  
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<213> Homo sapiens

<400> 7
Met Ser Ala Ala Val Thr Ala Gly Lys Leu Ala Arg Ala Pro Ala Asp
1 5 10 15

Pro Gly Lys Ala Gly Val Pro Gly Val Ala Ala Pro Gly Ala Pro Ala
20 25 30

Ala Ala Pro Pro Ala Lys Glu Ile Pro Glu Val Leu Val Asp Pro Arg
35 40 45

Ser Arg Arg Arg Tyr Val Arg Gly Arg Phe Leu Gly Lys Gly Gly Phe
50 55 60

Ala Lys Cys Phe Glu Ile Ser Asp Ala Asp Thr Lys Glu Val Phe Ala
65 70 75 80

Gly Lys Ile Val Pro Lys Ser Leu Leu Lys Pro His Gln Arg Glu
85 90 95

Lys Met Ser Met Glu Ile Ser Ile His Arg Ser Leu Ala His Gln His
100 105 110

Val Val Gly Phe His Gly Phe Glu Asp Asn Asp Phe Val Phe Val
115 120 125

Val Leu Glu Leu Cys Arg Arg Ser Leu Leu Glu Leu His Lys Arg
130 135 140

Arg Lys Ala Leu Thr Glu Pro Glu Ala Arg Tyr Tyr Leu Arg Gln Ile
145 150 155 160

Val Leu Gly Cys Gln Tyr Leu His Arg Asn Arg Val Ile His Arg Asp
165 170 175

Leu Lys Leu Gly Asn Leu Phe Leu Asn Glu Asp Leu Glu Val Lys Ile
180 185 190

Gly Asp Phe Gly Leu Ala Thr Lys Val Glu Tyr Asp Gly Glu Arg Lys
195 200 205

Lys Thr Leu Cys Gly Thr Pro Asn Tyr Ile Ala Pro Glu Val Leu Ser
210 215 220

Lys Lys Gly His Ser Phe Glu Val Asp Val Trp Ser Ile Gly Cys Ile
225 230 235 240

Met Tyr Thr Leu Leu Val Gly Lys Pro Pro Phe Glu Thr Ser Cys Leu
245 250 255

Lys Glu Thr Tyr Leu Arg Ile Lys Lys Asn Glu Tyr Ser Ile Pro Lys
260 265 270

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His Ile Asn Pro Val Ala Ala Ser Leu Ile Gln Lys Met Leu Gln Thr  
 275 280 285  
 Asp Pro Thr Ala Arg Pro Thr Ile Asn Glu Leu Leu Asn Asp Glu Phe  
 290 295 300  
 Phe Thr Ser Gly Tyr Ile Pro Ala Arg Leu Pro Ile Thr Cys Leu Thr  
 305 310 315 320  
 Ile Pro Pro Arg Phe Ser  
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<210> 8  
 <211> 320  
 <212> PRT  
 <213> Homo sapiens

<400> 8  
 Met Gly Asn Ala Ala Ala Lys Lys Gly Ser Glu Gln Glu Ser Val  
 1 5 10 15  
 Lys Glu Phe Leu Ala Lys Ala Lys Glu Asp Phe Leu Lys Lys Trp Glu  
 20 25 30  
 Ser Pro Ala Gln Asn Thr Ala His Leu Asp Gln Phe Glu Arg Ile Lys  
 35 40 45  
 Thr Leu Gly Thr Gly Ser Phe Gly Arg Val Met Leu Val Lys His Lys  
 50 55 60  
 Glu Thr Gly Asn His Tyr Ala Met Lys Ile Leu Asp Lys Gln Lys Val  
 65 70 75 80  
 Val Lys Leu Lys Gln Ile Glu His Thr Leu Asn Glu Lys Arg Ile Leu  
 85 90 95  
 Gln Ala Val Asn Phe Pro Phe Leu Val Lys Leu Glu Phe Ser Phe Lys  
 100 105 110  
 Asp Asn Ser Asn Leu Tyr Met Val Met Glu Tyr Val Pro Gly Gly Glu  
 115 120 125  
 Met Phe Ser His Leu Arg Arg Ile Gly Arg Phe Ser Glu Pro His Ala  
 130 135 140  
 Arg Phe Tyr Ala Ala Gln Ile Val Leu Thr Phe Glu Tyr Leu His Ser  
 145 150 155 160  
 Leu Asp Leu Ile Tyr Arg Asp Leu Lys Pro Glu Asn Leu Leu Ile Asp  
 165 170 175  
 Gln Gln Gly Tyr Ile Gln Val Thr Asp Phe Gly Phe Ala Lys Arg Val  
 180 185 190  
 Lys Gly Arg Thr Trp Thr Leu Cys Gly Thr Pro Glu Tyr Leu Ala Pro  
 195 200 205

Glu Ile Ile Leu Ser Lys Gly Tyr Asn Lys Ala Val Asp Trp Trp Ala  
210 215 220

Leu Gly Val Leu Ile Tyr Glu Met Ala Ala Gly Tyr Pro Pro Phe Phe  
225 230 235 240

Ala Asp Gln Pro Ile Gln Ile Tyr Glu Lys Ile Val Ser Gly Lys Val  
245 250 255

Arg Phe Pro Ser His Phe Ser Ser Asp Leu Lys Asp Leu Leu Arg Asn  
260 265 270

Leu Leu Gln Val Asp Leu Thr Lys Arg Phe Gly Asn Leu Lys Asn Gly  
275 280 285

Val Asn Asp Ile Lys Asn His Lys Trp Phe Ala Thr Thr Asp Trp Ile  
290 295 300

Ala Ile Tyr Gln Arg Lys Val Glu Ala Pro Phe Ile Pro Lys Phe Lys  
305 310 315 320